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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* RICHARD LANGLOIS, FRED MILANOVICH, BILLY  
COLSTON, STEVE BROWN, DON MASQUELIER, RAY MARIELLA,  
and KODOMUDI VENKATESWARAN

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Appeal 2009-009982  
Application 10/643,797  
Technology Center 1600

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Decided: February 3, 2010

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Before RICHARD E. SCHAFER, RICHARD TORCZON, and SALLY  
GARDNER LANE, *Administrative Patent Judges*.

LANE, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

The appeal, under 35 U.S.C. § 134, is from a Final Rejection of claims 1-5, 12, 15, 16, 19, 27, 29, and 31-40. Appellants canceled claims 6-11, 13-14, 17-18, 20-26, 28, and 30. (App. Br. 3). We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Appellants claim an apparatus for monitoring the air for bioagents.

The Examiner relied on the following patent documents:

Name	Number	Date
Colston	2003/0032172	February 13, 2002
Irving	6,468,330	October 22, 2002
Casey	2002/0187470	December 12, 2002
Miles	6,576,459	June 10, 2003
Fisher	6,897,031	May 24, 2005

Appellants appeal the rejection of claims 1-5, 12, 15, 16, 27, 32, 33, and 35-40 under 35 U.S.C. § 103(a) over Irving and Casey. Appellants refer to claims 5, 12, 15, 32, and 36-40 for the first time in their Reply Brief and only quote claim elements. (Reply Br. 3). “A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.” 37 C.F.R. § 41.37(c)(1)(vii). Accordingly, we focus on claim 1 in our review.

Appellants also appeal the rejections of the following claims:

- claim 19 under 35 U.S.C. § 103(a) over Irving, Casey, and Colston;
- claim 29 under 35 U.S.C. § 103(a) over Irving, Casey, and Fisher; and
- claims 31 and 34 under 35 U.S.C. § 103(a) over Irving, Casey, and Miles.

## II. FINDINGS OF FACT

### 1. Appellants' claim 1 recites<sup>1</sup>:

An autonomous monitoring apparatus for monitoring air for bioagents wherein the air may contain potential bioagent particles, comprising:

a collector for gathering said air being monitored,  
said collector separating selected potential bioagent particles from said air;

a wetted wall sample preparer for preparing a sample of said selected potential bioagent particles,  
said wetted wall sample preparer operatively connected to said collector for collecting and preparing said sample from said air gathered by said collector  
wherein said wetted wall sample preparer includes a wetted wall cyclone collector that concentrates said selected potential bioagent particles in a liquid and

a unit for adding optically encoded microbeads imbedded with precise ratios of red and orange fluorescent dyes yielding an array of beads having a unique spectral address and each bead coated with capture antibodies specific for a given antigen to said liquid and said selected potential bioagent particles;

and

a detector for detecting said bioagents in said sample,  
said detector, operatively connected to said wetted wall sample preparer wherein said detector utilizes said optically encoded microbeads  
and wherein said detector includes a flow cytometer for analyzing said optically encoded microbeads that are imbedded with precise ratios of red and orange fluorescent dyes yielding an array of beads having a unique spectral address and each bead coated with capture antibodies specific for a given antigen

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<sup>1</sup> Claim 1 has been modified by adding indentations. *See* 37 C.F.R. § 1.75(i).

with a laser unit for individually interrogating said optically encoded microbeads and detecting said bioagents.

(App. Br. 38, Claims App'x).

2. Irving provides an apparatus for a method of separating particles, such as bioagents, from a gas and collecting them within a liquid. (Irving col. 1, ll. 19-27, and col. 3, ll. 32-35).

3. Irving teaches that the particle separating assembly has a plurality of cyclone separation chambers where the particles are separated from the gas by centrifugal force and collected when the walls of the chamber are washed with liquid (Irving col. 3, ll. 45-54), thus allowing for concentration of the particles in a “wetted wall sample preparer.”

4. Irving teaches that the apparatus can be integrated with biosensor and other detector technologies. (Irving col. 4, ll. 12-18; *see also id.* at col. 1, l. 18, through col. 2, l. 47).

5. Irving teaches that it would be desirable for monitoring apparatuses to be able to be placed within ventilation ducts in a building and left sampling for an extended length of time. (Irving col. 2, ll. 4-6).

6. Irving teaches that it would desirable for monitoring apparatuses to provide “near real-time monitoring.” (Irving col. 2, ll. 28-30).

7. Irving does not teach optically encoded microbeads imbedded with dyes.

8. Casey provides methods for identifying nucleic acids. (Casey ¶ [0003]).

9. Casey teaches using microspheres having different ratios of red and orange fluorescence, which bind to different oligonucleotides and are separated by flow cytometry with a laser, to analyze a sample containing multiple oligonucleotides in a multiplexed format. (Casey ¶¶ [022] and [0256]).

10. Casey teaches using antibodies as intermediaries to attach to a microsphere. (Casey ¶ [0065]).

11. The publication “Bioterrorism Detection System (APDS),” *Homeland Security*, August 29, 2008, states: “Successful partnering with private industry has been a key factor in the rapid advancement and deployment of biodefense instruments such as these. The APDS technology has been licensed and is currently undergoing commercialization.”

12. The publication “Detecting Bioaerosols When Time is of the Essence,” *Science & Technology Review*, October 2004, discusses an autonomous pathogen detection system (APDS), which reportedly won a research and development award.

### III. ISSUES

Does Irving teach an “autonomous monitoring apparatus”? Have Appellants provided sufficient evidence of secondary considerations such that, when we consider the totality of the evidence before us, we conclude that the Examiner erred in rejecting the claims under 35 U.S.C. § 103(a)?

#### IV. ANALYSIS

##### *Claim 1*

Appellants claim an apparatus that monitors air for bioagents and has three basic components: a collector, a wetted wall sample preparer, and a detector. (FF 1). The claimed monitoring apparatus uses a wetted wall cyclone collector to separate the bioagents from the air and microbeads that are coated with capture antibodies and imbedded with precise ratios of fluorescent dyes to bind the bioagents and analyze them under flow cytometry. (FF 1).

Irving teaches an apparatus for separating particles, such as bioagents, from a gas and collecting them within a liquid. (FF 2; *contra* App. Br. 13). Like the claimed apparatus, the apparatus of Irving relies on a wall cyclone collector, which separates particles from a gas, such as air, by centrifugal force to collect and concentrate them by wetting the walls of the cyclone chamber with liquid. (FF 3; *contra* App. Br. 13-14). Irving teaches that the separating apparatus can be integrated with biosensors to detect bioparticles. (FF 4; *contra* App. Br. 14).

Irving does not teach using optically encoded microbeads imbedded with dyes to distinguish between bioagents (FF 7), but Casey teaches a method of separating oligonucleotides by binding them to microspheres with different ratios of red and orange fluorescent dyes and separating the microspheres with flow cytometry in order to analyze multiple oligonucleotides with lasers in a multiplexed assay. (FF 9; *contra* App. Br. 14-15). Casey also teaches that antibodies can be used as intermediaries to attach to the microspheres. (FF 10).

Thus, despite Appellants' arguments to the contrary, each limitation recited in claim 1 is taught in either Irving or Casey.

Those of skill in the art would have had reason to combine the separation apparatus of Irving with the microbeads of Casey because the microbeads allow for multiplexed assays in which multiple bioagents can be analyzed from one sample, as taught in Casey. (*See Ans. 4*). Appellants assert there would have been no reason to combine the teachings of Irving and Casey (*see App. Br. 16*), but provide no persuasive arguments against the reasoning provided by the Examiner. “Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR Int'l v. Teleflex Inc.*, 550 U.S. 398, 402 (2007).

Appellants assert that the prior art fails to teach an “autonomous monitoring apparatus” and that because of this failure one skilled in the art would not have had an expectation of success in making an autonomous device. (App. Br. 12-13 and 15-16). Appellants further argue that it was unexpected that such a device could perform autonomously. (App. Br. 33). Appellants did not cite to, and we do not find, an express definition of “autonomous” in Appellants’ specification. The specification mentions that an “inherently autonomous” apparatus is one in which “control and/or monitoring functions are *ideally* performed remotely.” (Spec. ¶ [0078] (emphasis added)). We construe the term “autonomous” to be broader than allowing for remote control and monitoring because Appellants provide that this is only an *ideal* embodiment. *See In re Prater*, 415 F.2d 1393, 1396 (CCPA 1969) (“an applicant should [not] have limitations of the specifications read into a claim where no express statement of the limitation

is included in the claim.”). “During examination, ‘claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *In re American Academy of Sci. Tech Center*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citations omitted). Given the lack of limitations on the operation of the apparatus, such as a time duration during which or location where the apparatus can operate independently, we construe “autonomous monitoring apparatus” to include an apparatus that can function on its own such as the apparatus taught by Irving.

In particular, Irving teaches that monitoring apparatuses are desirably placed in remote areas such as ventilation ducts and should be able to be left for extended lengths of time (FF 5), while providing “near real-time monitoring” (FF 6). Thus, Irving teaches that monitoring apparatuses that are “autonomous” within the broad construction of the term in Appellants’ claim.

Appellants also argue that the claimed apparatus is not obvious because they assert that it has been licensed (App. Br. 34), has obtained commercial success (*id.*), has been praised by others (*id.* 35), and fulfills a long-felt need (*id.* 35-36). Appellants provide copies of two publications which indicate that an autonomous monitoring system has been licensed, tested in the field, and has won an award. (FFs 11 and 2). Appellants do not provide declarations or other evidence from a person skilled in the art in support of their assertions of non-obviousness. (See App. Br. 41, Evidence App’x).

“It is well settled ‘that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.’” *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983) (quoting *In re Tiffin*, 448 F.2d 791 (CCPA 1971). Appellants do not show that the apparatus discussed in the publications or the licensed product is that of Appellants’ claim 1. Therefore, Appellants do not explain how the evidence presented is commensurate with the scope of the claim.

Furthermore, Appellants do not point to, and we do not find, discussion in the provided articles of the elements of the claimed apparatus that produced the asserted commercial success or praise, or that allowed Appellants to succeed after others had failed for a long time. *See In re GPAC, Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995) (“For objective evidence to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention. ‘A *prima facie* case of nexus is generally made out when the patentee shows both that there is commercial success, and that the thing (product or method) that is commercially successful is the invention disclosed and claimed in the patent.’”) (citation omitted); *see also In re DBC*, 545 F.3d 1373, 1384 (Fed. Cir. 2008) (“We have held on a number of occasions that evidence of commercial success alone is not sufficient to demonstrate nonobviousness of a claimed invention. Rather, the proponent must offer proof ‘that the sales were a direct result of the unique characteristics of the claimed invention-as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.’”) (citation omitted). In fact, one of the articles provided by Appellants (FF 11) credits “successful partnering with private industry” as a “key factor in the rapid advancement and deployment

of biodefense instruments such as these,” but does not point to any particular structural element recited in Appellants’ claim 1 as a factor.

In addition, Appellants have not provided evidence of market share or even the sales numbers to show commercial success of the claimed apparatus. Thus, Appellants’ assertion of the commercial success of the claimed apparatus is merely unsupported attorney argument. *See Meitzner v. Mindick*, 549 F.2d 775, 782 (CCPA 1977) (“Argument of counsel cannot take the place of evidence lacking in the record.”); *see also Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 1151 (Fed. Cir. 1983) (“There was no evidence of market share, of growth in market share, of replacing earlier units sold by others or of dollar amounts, and no evidence of a nexus between sales and the merits of the invention. Under such circumstances, consideration of the totality of the evidence, including that relating to commercial success, does not require a holding that the invention would have been nonobvious at the time it was made to one skilled in the art.”).

Accordingly, Appellants have not persuasively rebutted the *prima facie* case for obviousness of the claimed apparatus and Appellants have not persuaded us that the rejection of claim 1 under 35 U.S.C. § 103(a) is in error.

#### *Claims 19, 29, 31, and 34*

In addition to Irving and Casey, the Examiner relied on Colston, Fisher, and Miles, which were found to teach the additional elements of dependent claims 19, 29, 31, and 34, respectively, and render them obvious. Appellants repeated their arguments against the rejection of claim 1, but did not argue that these references fail to teach the elements added to the dependent claims. (See App. Br. 18-20, 23-25, and 29-31; *see also* Reply

Br.). Appellants also failed to provide specific arguments why the Examiner's findings of a reason to combine the references and an expectation of success were in error. (*See* Ans. 7-9, 12-16; *see* App. Br. 20-21, 25-26, and 31-32, *see also* Reply Br.). Accordingly, Appellants have not persuaded us that the Examiner erred in rejecting claims 19, 29, 31, and 34 under 35 U.S.C. § 103(a).

## V. CONCLUSIONS

An "autonomous monitoring apparatus" is taught by Irving.

Appellants have not directed us to sufficient evidence of secondary considerations such that, when we consider the totality of the evidence before us, we conclude that the Examiner erred in rejecting the claims under 35 U.S.C. § 103(a).

Appellants have not persuaded us that the Examiner erred in rejecting claims 1-5, 12, 15, 16, 19, 27, 29, and 31-40.

## VI. ORDER

Upon consideration of the record and for the reasons given, the rejection of claims 1-5, 12, 15, 16, 27, 32, 33, and 35-40 under 35 U.S.C. § 103(a) over Irving and Casey is AFFIRMED;

the rejection of claim 19 under 35 U.S.C. § 103(a) over Irving, Casey, and Colston is AFFIRMED;

the rejection of claim 29 under 35 U.S.C. § 103(a) over Irving, Casey, and Fisher is AFFIRMED; and .

the rejection of claims 31 and 34 under 35 U.S.C. § 103(a) over Irving, Casey, and Miles is AFFIRMED.

No time period for taking any subsequent action in connection with the appeal may be extended under 37 C.F.R. § 1.136(a).

**AFFIRMED**

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